

# ABSTRACT

**[0053]** An imaging apparatus consists of multiple miniaturized microscopes arranged into an array capable of simultaneously  
5 imaging a portion of an object. A step-and-repeat approach is followed to scan the object and generate multiple sets of checkerboard images. In order to improve the quality of the composite image produced by concatenation or stitching of the checkerboard images, the performance of each microscope is  
10 normalized to the same base reference for each relevant optical-system property. Correction factors are developed through calibration to equalize the spectral response measured at each detector; to similarly balance the gains and offsets of the detector/light-source combinations associated with the various  
15 objectives; to correct for geometric misalignments between microscopes; and to correct optical and chromatic aberrations in each objective.